Remarks

The above amendments and these remarks are responsive to the Office Action mailed September 9, 2005. With entry of this amendment, claims 43, 44, 63 and 64 are pending. No new matter has been added by these amendments.

Applicants thank the Examiner for carefully considering the subject application. In the present Office action, two references are separately applied to the pending claims: Mendler (U.S. 6,125,801) and Yoshikawa (U.S. 5,913,298). Each reference is discussed in detail below.

Mendler (U.S. 6,125,801)

Turning first to Mendler, the Office action applies sub-section (a) of 35 U.S.C. §102. Applicants have reviewed Mendler and note that it issued on Oct. 3, 2000, which is after the priority date of the present application, which is Oct. 18, 1999. Thus, Mendler would not qualify as prior art under 35 U.S.C. §102(a).

Further, even assuming the Office action applies Mendler under another sub-section, Applicants respectfully submit that Mendler fails to show all claimed elements. For example, Claim 43 claims:

> A method for controlling an engine having an intake manifold and an outlet control device coupled to the manifold for controlling flow exiting the manifold and entering at least one cylinder of the engine, the engine further having an inlet control device for controlling flow entering the manifold, the outlet control device being at least one of the intake or exhaust valves of the cylinder, the method comprising:
>
> determining a desired engine output;
>
> calculating a desired cylinder charge based on said desired engine output;
>
> adjusting at least valve lift of the outlet control device to provide said desired cylinder charge; and
>
> adjusting the inlet control device based on an engine operating parameter.

The Office action cites two sections of Mendler as allegedly showing the above features, selections of which are reproduced below.

Col. 5, lines 25-36

Air flow into engine 8 can be controlled by a throttle plate 46 or other arrangement. The intake valve 14 may include an adjustable actuation and/or timing mechanism 48 for controlling air flow into the cylinder 12. Engine 8 can be used with one or more intake valves per cylinder. Engine 8 may have one or more valve adjustment mechanisms 48 to provide the same or different adjustment settings for each intake valve, for example valve adjustment mechanism 48 may provide different intake valve adjustment settings for each valve in cylinder 12 and/or mechanism 48 may provide different intake valve adjustment settings between cylinders for engines having multiple cylinders.

Col. 7, lines 6-16

The engine's ability to operate at high compression ratios without knock when operating on lean equivalence ratios is due in part to the reduced pressure and temperature rise of the end gas, where the end gas is the portion of the fuel/air mixture in the combustion chamber consumed last by the combustion flame front. Compression ratios above line 2 will generally cause the engine to knock. The location of line 2 depends on several factors, such as compression ratio, equivalence ratio, and on the mass and temperature of air inducted into cylinder 12, that is controlled by throttle 46 and/or valve adjustment mechanism 48.

Applicants have reviewed each citation above in detail but fail to locate several elements. For example, Applicants can find no determination of a desired cylinder charge based on a desired engine output. Applicants have recognized that by determining a desired air amount based on a desired engine output, it is possible to develop a more portable control architecture that can more easily accommodate different modes of operation, such as idle speed control, cruise control, driver control, etc. Further, such an approach facilitates coordinated operation between the outlet control device and the inlet control device thereby enabling improved engine response.

Mendler, on the other hand, simply alludes to air flow control or control of inducted mass into the cylinder, without any indication that such control is based on a desired engine output. Further, there is no hint in Mendler as to how a control architecture could be devised to achieved such as set forth in claim 43.

As another example, Applicants can find nothing in Mendler that describes adjusting valve lift to provide a desired air amount.

Similar arguments also apply to the remaining claims.

Yoshikawa (U.S. 5,913,298)

Turning now to Yoshikawa, the Office action asserts that all features are shown, but fails to provide any specific reference. Nevertheless, Applicants have reviewed Yoshikawa et al. and respectfully submit that it is inapplicable to the pending claims. For example, Yoshikawa et al. relates solely to variable valve timing systems, with no mention of any adjustment of valve lift. In addition, Applicants can find no disclosure of determining a desired air amount based on a desired engine output and adjusting valve operation to provide the desired air amount.

Again, similar arguments also apply to the remaining claims.

The above-identified application is believed to be in condition for allowance, and such allowance is courteously solicited. If any further amendment is necessary to advance prosecution and place this case in allowable condition, the Examiner is courteously requested to contact the undersigned by fax or telephone at the number listed below.

Please charge any cost incurred in the filing of this Amendment, along with any other costs, to Deposit Account No. 06-1510. If there are insufficient funds in this account, please charge the fees to Deposit Account No. 06-1505. A duplicate copy of this sheet is enclosed.

CERTIFICATE OF FACSIMILE

I hereby certify that this correspondence is being sent via facsimile to the U.S. Patent and Trademark Office via facsimile at (571) 273-8300 on December 5, 2005

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